

Opener Question

9. Driving a snowmobile across a frozen lake, Sheldon starts from the most westerly point and travels 8.0 km before he turns right at an angle of 59° and travels 6.1 km, stopping at the most easterly point of the lake. How wide, to the nearest tenth of a kilometre, is the lake?



Nov 3-9:37 AM

9. Driving a snowmobile across a frozen lake, Sheldon starts from the most westerly point and travels 8.0 km before he turns right at an angle of 59° and travels 6.1 km, stopping at the most easterly point of the lake. How wide, to the nearest tenth of a kilometre, is the lake?

$a = 8.0$
 $b = 6.1$
 $C = 59^\circ$

$$c^2 = a^2 + b^2 - 2ab \cos C$$

$$c^2 = 8^2 + 6.1^2 - 2(8)(6.1) \cos 59^\circ$$

$$c^2 = 64 + 37.21 - 97.6 (0.5150)$$

$$c^2 = 101.21 - 50.3$$

$$\sqrt{c^2} = \sqrt{50.91}$$

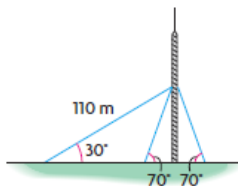
$$c = 7.1$$

The lake is 7.1 km across.

Nov 3-9:37 AM

Final Review Questions

6. A temporary support cable for a radio antenna is 110 m long and has an angle of elevation of 30° . Two other support cables are already attached, each at an angle of elevation of 70° . How long, to the nearest metre, is each of the shorter cables?



Nov 15-7:33 AM

Method 1/2

Method Sine Law

$$\frac{\sin 110}{110} = \frac{\sin 30}{c}$$

$$\sin 110(c) = \sin 30 (110)$$

$$0.9396 c = 0.5000 (110)$$

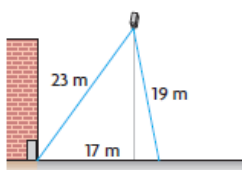
$$\frac{0.9396}{0.9396} = \frac{0.5000 (110)}{0.9396}$$

$$c = 58.5 \text{ m}$$

The shorter cables are 59 m long.

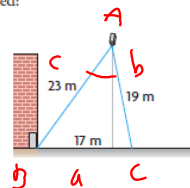
Apr 13-7:04 AM

8. A security camera needs to be placed so that both the far corner of a parking lot and an entry door are visible at the same time. The entry door is 23 m from the camera, while the far corner of the parking lot is 19 m from the camera. The far corner of the parking lot is 17 m from the entry door. What angle of view for the camera, to the nearest degree, is required?



Nov 15-7:34 AM

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Nov 15-7:34 AM

$$\begin{aligned}
 a^2 &= b^2 + c^2 - 2bc \cos A \\
 17^2 &= 23^2 + 15^2 - 2(23)(15) \cos A \\
 289 &= 529 + 225 - 690 \cos A \\
 289 &= 890 - (690 \cos A) \\
 289 - 890 &= -690 \cos A \\
 \frac{-601}{-690} &= \cos A \\
 (0.871) &= \cos A \\
 \cos^{-1}(0.871) &= A \\
 47 &= A
 \end{aligned}$$

p314-315
Post Review
Ch 5

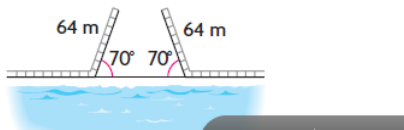
Apr 13-9:57 AM

p 314 & 315 q. 1-9

p 316 q.1-6, 8

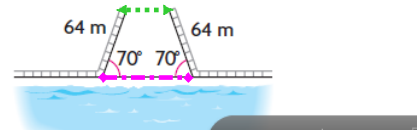
Nov 15-10:28 AM

4. A Bascule bridge is usually built over water and has two parts that are hinged. If each part is 64 m long and can fold up to an angle of 70° in the upright position, how far apart, to the nearest metre, are the two ends of the bridge when it is fully open?



Nov 11-10:37 AM

4. A Bascule bridge is usually built over water and has two parts that are hinged. If each part is 64 m long and can fold up to an angle of 70° in the upright position, how far apart, to the nearest metre, are the two ends of the bridge when it is fully open?



Nov 11-10:37 AM